

# PATENT SPECIFICATION

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## DRAWINGS ATTACHED

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## (54) FLUID PRESSURE-INDICATING DEVICE

(71) We, JOUVENEL & CORDIER S.A.,  
 a French body corporate, of P.O. Box 41,  
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invention, for which we pray that a patent  
 5 may be granted to us, and the method by  
 which it is to be performed, to be particularly  
 described in and by the following state-  
 ment:—

This invention relates to a fluid pressure  
 10 indicating device for visually indicating fluid  
 pressure, that is to say a device intended to  
 indicate whether fluid pressure is, or is not,  
 present in a pipe system. Such a device per-  
 forms the same function as that of warning  
 15 lamps provided in electrical circuits to  
 indicate the presence of voltage in a con-  
 ductor.

According to the invention there is pro-  
 vided a fluid pressure indicating device com-  
 20 prising a first resilient and fluid tight  
 diaphragm arranged so as to be exposed to  
 the pressure to be indicated and overlaid by a  
 second diaphragm having one or more slits  
 25 therein, the arrangement being such that ex-  
 pansion of the first diaphragm on the applica-  
 tion of pressure thereto distorts the second  
 diaphragm to open the slits thereby to expose  
 part of the surface of the first diaphragm  
 which is visually distinctive from the surface  
 30 of the second diaphragm.

A preferred embodiment of the invention  
 will now be described by way of example,  
 with reference to the accompanying drawing.

Figure 1 is a sectional view of a fluid pres-  
 35 sure indicating device according to the inven-  
 tion, and

Figure 2 is a plan view of the device shown  
 in Figure 1, when subjected to fluid pressure.

Referring to Figure 1, it will be seen that  
 40 the device comprises a body 1 adapted to be  
 screwed or similarly connected to a pipe (not  
 shown) in which it is required to detect any  
 fluid pressure that may be present.

The body 1 has a central bore 2 which  
 45 opens into an inner chamber 3. The chamber  
 3 is closed by a first flexible, deformable  
 diaphragm 4, made of rubber, for example.  
 The diaphragm 4 is thus directly subjected to

any pressure that may obtain in the chamber  
 3 and thus in the bore 2 of the body 1. The  
 50 diaphragm 4 is fluid tight.

Overlying the diaphragm 4, on the side of  
 the diaphragm 4 remote from the chamber 3,  
 is a second flexible deformable diaphragm 5.  
 The diaphragm 5 is visually distinctive from  
 55 the diaphragm 4, for example, the diaphragms  
 may each be of a colour differing from the  
 other, or one diaphragm may have lines  
 running transversely to lines on the other  
 diaphragm, the two sets of lines being of the  
 60 same or different colours. The diaphragm 5  
 has one or more slits, for example it may be  
 divided into four sectors by two slits passing  
 through the centre and at right angles to each  
 other. 65

The body 1 also comprises a transparent  
 inspection window or cap 6 held by a nut 7.  
 The cap 6 also serves to hold the diaphragms  
 4 and 5 in position in the body as a result of  
 the clamping action of the nut 7. In order that  
 70 the diaphragm 5, when in the inoperative con-  
 dition, shall be subjected only to atmospheric  
 pressure, the cap 6 has a passage 8 connect-  
 ing a chamber 9, lying between the diaphragm  
 5 and the cap 6, with the atmosphere. 75

The pressure indicating device operates as  
 follows:—

When there is no pressure in excess of  
 atmospheric pressure in the bore 2 and the  
 chamber 3, the diaphragm 4 is in the inopera-  
 80 tive position and, like the diaphragm 5, it  
 remains flat. The diaphragm 5 is thus not de-  
 formed and only the upper part of the  
 diaphragm 5, of say a certain colour, can be  
 seen through the cap 6. 85

If pressure in excess of atmospheric pres-  
 sure is present in the bore 2 and thus in the  
 chamber 3, the diaphragm 4 is deformed  
 under the action of this pressure. It assumes  
 a convex shape and is pressed against the  
 90 diaphragm 5 to which it transmits deforma-  
 tion. During the deformation of the diaphragm  
 5, the visual effect shown in Figure 2 can be  
 seen to appear through the cap 6 as a result  
 of the slits being opened, that is to say the  
 95 diaphragm 4, of say a certain colour, is

observed to appear through the cut-away portion in the diaphragm 5 which is of say another colour. The presence of pressure is thus readily detected by simple visual observation.

It will, of course, be understood that the invention is not limited to the embodiment described and illustrated, but that it covers all the variants thereof as defined by the appended claims. Thus, in particular, the particular form of the diaphragm 5, illustrated in Figure 2 of the drawing, constitutes but one example.

WHAT WE CLAIM IS:—

1. A fluid pressure indicating device comprising a first resilient and fluid tight diaphragm arranged so as to be exposed to the pressure to be indicated and overlaid by a second diaphragm having one or more slits therein, the arrangement being such that expansion of the first diaphragm on the application of pressure thereto distorts the second diaphragm to open the slits thereby to expose part of the surface of the first diaphragm which is visually distinctive from the surface of the second diaphragm.

2. A fluid pressure indicating device according to claim 1, wherein the visible surfaces of the diaphragms are of different colours.

3. A fluid pressure indicating device according to claim 1 or claim 2, wherein the second diaphragm is slit along two lines which pass through the centre of the diaphragm and extend at right angles to each other.

4. A fluid pressure indicating device as claimed in any preceding claim including a body having a bore therein adapted to be connected with the source of pressure, a chamber formed in the body and connected with the bore, and means for securing the first diaphragm on the body so as to seal the chamber.

5. A fluid pressure indicating device as claimed in claim 4 including a transparent inspection window arranged over the second diaphragm.

6. A fluid pressure indicating device as claimed in claim 5, wherein the first diaphragm, the second diaphragm and the inspection window are secured in position on the body by means of a flanged nut.

7. A fluid pressure indicating device substantially as herein described with reference to the accompanying drawing.

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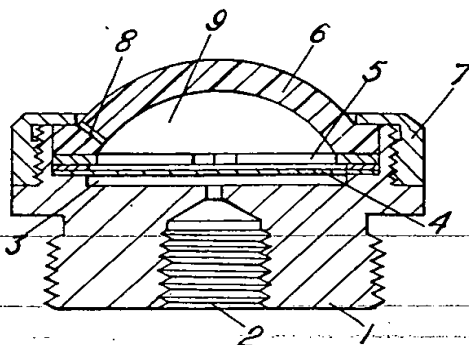
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1 SHEET

COMPLETE SPECIFICATION

This drawing is a reproduction of  
the Original on a reduced scale

*Fig.1.*



*Fig.2.*

